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To: U.S. Fish and Wildlife Service and California State Water Resources Control Board

From: Travis Longcore, William Haas, and Catherine Rich

Date: April 14, 2009

Re: Alternative Flow Regime for Middle Piru Creek

Land Protection Partners, working with herpetologist William Haas of Pacific Coast Conservation Alliance, proposed an alternative flow regime for middle Piru Creek that involves a floor on summer releases of 15 cfs from Pyramid Lake. This proposal was reviewed by the U.S. Fish and Wildlife Service (USFWS) in a letter dated February 17, 2009. This memorandum responds to some of the questions raised by the February 17 letter from the USFWS.

This alternative proposal to allow some enhanced summer flows in Piru Creek was prompted by concern for the native trout, which are genetically identical to the endangered steelhead downstream. The need to balance conditions for native fish and native (endangered) amphibians is a well-known attribute of the project that has been acknowledged as a need by the USFWS. In 2005, Ventura Field Office deputy field supervisor Don Reck stated in the Los Angeles *Daily News*, “We do want to coordinate with the state and through that process reach a proper balance between salmonids (trout) and the well being of the toads.”

We were asked to propose a flow regime that would maximize benefits for listed amphibians as well as for native, resident rainbow trout. The rationale behind a proposal for an alternative flow regime is to prevent the adverse impacts to native rainbow trout that would result from implementing the proposed project as designed. The environmental review documents are clear regarding impacts on native trout, and subsequent comments and revisions to the Draft Environmental Impact Report have not disputed this point.

“Rainbow trout in the proposed project area would be subject to direct impacts by implementation of the proposed project. Direct impacts from reduced summer flows would include a reduction in aquatic habitat, increased heat stress, and increased predation by aquatic and terrestrial predators. ... Increased summer flows now occurring in middle Piru Creek are provided in an effort to maintain fish populations through the heat of the summer, but even under existing conditions trout likely experience thermal stress and reduced fitness (CDFG, 2004b).”

“The proposed project would be likely to result in periods of reduced flows, as compared to current conditions, during the late summer and fall. This would result in increased water temperatures and further thermal stress on rainbow trout and would probably restrict fish to isolated pools and deep channels. While some fish would probably survive in deep pools and shaded canyons, implementation of the proposed project would result in an adverse impact to rainbow trout and would potentially eliminate the majority of trout occurring in middle Piru Creek between July and October. In addition, decreasing water levels would also increase the risk of predation from birds such as herons and egrets” (DEIR, p. 3-29).

The project design has not changed since this assessment was made, yet in that time it has been determined that the rainbow trout found in middle Piru Creek are genetically identical to native southern steelhead — that is, they are native fish not genetically contaminated by hatchery stock and, but for the Santa Felicia Dam blocking their passage to the ocean, would be steelhead (Girman and Garza 2006). Furthermore, since the initial environmental analysis of this project, the National Marine Fisheries Service (NMFS) released a draft of the “Viability Criteria for Steelhead of the South-Central and Southern California Coast” from the Technical Recovery Team for the South-Central and Southern California Coast Recovery Domain (2007). This document forms the scientific basis for recovery criteria for the region. Relevant to Piru Creek, the document states:

“Assessment at the group level indicates a priority for securing inland populations in the southern Coast Ranges and Transverse Ranges, and a need to maintain not just the fluvial-anadromous life-history form, but also lagoon-anadromous *and freshwater-resident forms in each population*” [emphasis added] (NMFS 2007).

In other words, populations of the freshwater-resident forms of rainbow trout in middle Piru Creek should be secured for the recovery of the species. NMFS thus envisions future interchange between freshwater and anadromous forms. Regardless of whether such interchange is currently possible in Piru Creek, the scientific advisors to NMFS put a priority on conserving the native trout population there. We believe that recovery needs for this species should be factored into any decision about water flow in middle Piru Creek, such that the needs of arroyo toads, red-legged frogs, and these native rainbow trout can be met. At the very least, it would be a significant adverse environmental consequence for native rainbow trout to be eliminated entirely from middle Piru Creek and the flow regime should be devised to ensure that this does not occur.

The review of the alternative flow regime by the USFWS raises some questions that deserve further discussion.

1. We agree that the first three points of our proposal are substantially similar to the proposed project. Our proposal differs, however, in ensuring that large flows are released on a 5–7 year return interval, while the proposed license amendment does not.
2. The USFWS concluded that summer flows of 15 cfs would scour middle Piru Creek, channelizing portions of the creek and causing exotic vegetation and predators to increase in abundance. We note that flows of this magnitude occur naturally during wet years. Our

proposed flow level is 40% less than the flow that has been in the creek since 1992. It is only 5 cfs greater than the flow that was in middle Piru Creek from the construction of Pyramid Dam through 1992.

“After the installation of Pyramid Dam, stream flows from July through October were artificially maintained at approximately 10 cfs. In 1992, artificial spring and summer flows were increased and maintained at 25 to 35 cfs from May through October to support a recreational fishery” (Sandburg 2006).

It seems from the available reports that the overgrowth of vegetation in arroyo toad habitat occurred during the period after 1992 when 25 cfs was released. With a flow of 10 cfs, surveys still showed occupancy and reproduction of arroyo toads through the 1980s and early 1990s (summarized in Sandburg 2006). (There were other aspects of the flow regime during this period that were not desirable, such as water deliveries and gate testing during arroyo toad breeding season, etc.). We agree that enhanced flows over long periods without scouring flows would result in entrenched channels and excess vegetation growth. The reworking of sediments and channel morphology from winter scouring flows (as described in the EIR and EA for the project), however, should produce a channel that can accommodate greater summer flows without adversely impacting toads (p. 49, Sandburg 2006).

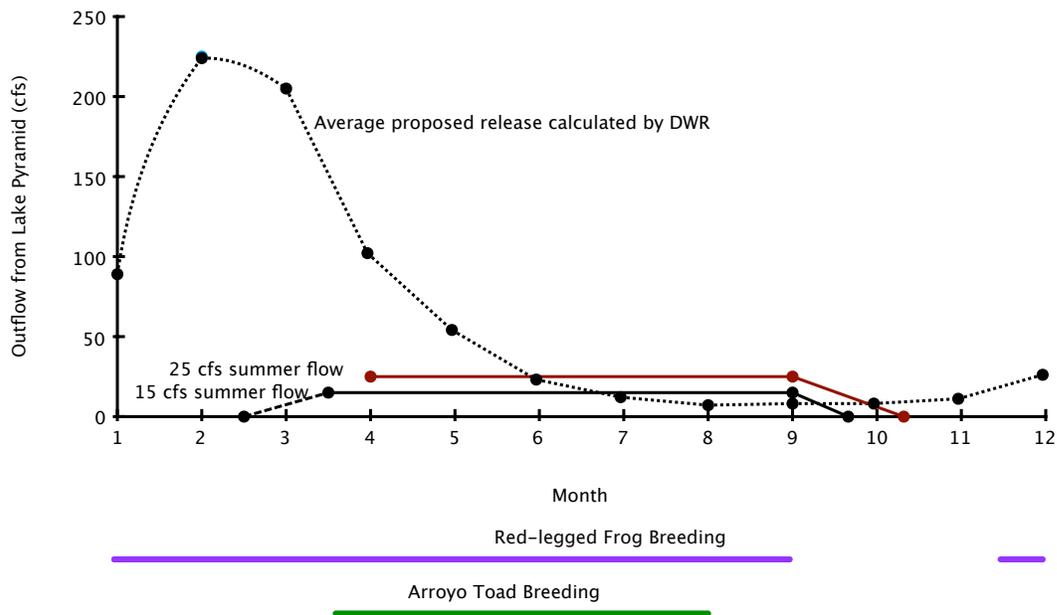


Figure 1. Predicted average flow from Pyramid Lake with alternative flow regime and previous flow regime. Breeding periods of arroyo toad and red-legged frog are shown for reference.

3. The USFWS expressed concern that gradual increase to 15 cfs in March would cause take of arroyo toads by flushing eggs downstream. We graphed the average outflow from Pyramid Lake as calculated by Department of Water Resources staff with our proposed flow regime and the previous flow regime (Figure 1). As these average numbers show, it is extremely unlikely that releases would have to be increased in March to meet the 15 cfs proposed release. The safeguard

that releases would be increased slowly would ensure that any changes experienced by amphibians in what would already be a drought year would be well less than that which could occur naturally (e.g., on March 14–15, 2003 the flows in Piru Creek above Lake Pyramid went from 12 cfs to 266 cfs). Moreover, USFWS’s concern would apply equally to the “natural” flow regime proposed by the applicant here: if there is a storm event during the arroyo toad breeding season, increased flows will be released and cause take. (Our proposal would release this water as well, because it provides a floor to summer releases, not a maximum.)

We note that it may be worthwhile, even if our alternative proposal is not adopted, to condition the release of “natural” flows from Lake Pyramid such that extreme storm events do not wipe out reproduction of listed species during years with anomalously high precipitation during critical points in the breeding season of listed species. In May 2003, an “abrupt spring storm” caused flows in excess of 100 cfs, which eliminated breeding for arroyo toads for the season (p. 18, Sandburg 2006). Such events are a predictable outcome of the currently proposed project. Because the releases of natural flows would be part of a discretionary action in the operation of Pyramid Lake, it is conceivable that a court could conclude that such releases of spring storms would constitute take.

4. The USFWS did not find any support for a sediment replenishment project. Our inclusion of a sediment replenishment project is in response to the analysis already presented on the project in the EA and EIR. The EA concludes:

“Pyramid dam blocks the natural transport of sediment to the project reach, which is important in the development of sandy bars, terraces, and breeding pools used by arroyo toads. Sediment loads from the upstream reaches of the project reach and secondary sources, such as Agua Blanca Creek, provide the fine sediments needed by the arroyo toad in middle and lower portions of the project reach. The upper portions of the project reach, however, would lose sediment at higher rates because the more frequent higher flows in this area would move sediment downstream. Because the arroyo toad does not occur from Pyramid dam to Frenchman’s Flat (RM 0 to RM 4), the increased loss of sediment in this area would not affect the toad. Monitoring the arroyo toad population in the project reach, as recommended by the CDFG and FWS, would allow the early detection of potential adverse affects on arroyo toads from the loss of sediment in portions of the system, either because the toads have become established in the upstream portions of project reach, or the loss of sediment extends farther downstream than anticipated” (p. 61–62).

We have found that monitoring without explicit trigger conditions and a predetermined process to implement mitigation rarely results in corrective action. Furthermore, the project will result in additional erosion in the upper four miles of the project reach. Even though arroyo toads are not present in this portion of the creek, the operation of the dam eliminated habitat here and agencies should consider mitigative action in the form of a sediment replenishment plan. (See DEIR, p. 3-72, in which sediment provision was investigated because of the erosion impacts).

Our replenishment program focused on the top four miles below Pyramid Lake, not those reaches farther downstream. We wrote, “The arroyo toad habitat values of the first four miles of stream below Pyramid Dam have already been destroyed by clear water releases. Further stream

degradation will take place with the larger and more frequent winter water releases.”

We also indicated the need for additional planning and compliance actions to develop and implement such a plan but asked that this action be tied to the increased releases from Pyramid Lake. This provides a mechanism to mitigate for what is an obvious and documented adverse impact of dam operation. This is not strictly an issue that would be regulated by USFWS because the habitat is no longer occupied, but implementation of such a program would have to be designed to avoid impacts on lower reaches of the creek where local sediment sources are apparently adequate.

5. USFWS asserts that management of bullfrogs as part of the project is only necessary if summer water is allowed. We disagree with this position. Bullfrogs will continue to be a part of the middle Piru Creek system, even with the “natural” flow regime. For example, in 2005, the flow rates under the natural regime were 15 cfs through the summer months, so the only benefit of the “natural” regime in terms of bullfrogs was derived from the large winter storms. Depending on climatic fluctuations discussed below, these summer flows could occur for extended periods of above average rainfall associated with the warm phase of the Pacific Decadal Oscillation. Benefits to arroyo toads and other native species would be maximized by incorporating a bullfrog control program such as the one we describe, regardless of what flow regime is ultimately adopted, because it is not prudent to count on future climate to provide conditions to appreciably decrease bullfrog abundance beyond any reductions from scouring winter flows. In the same vein, it is also not appropriate to depend on the natural flows to provide sufficient water to support listed and rare species (see below).

Our alternative scheme does allow for reduction of flows out of Pyramid Dam to zero during drought years, but reduces the period that native fish can be exposed to this stress. During the period from the middle of September to the first winter rains, outflows from Pyramid Dam may be reduced to zero or near zero under our plan. The difference between our approach and the proposed project is that the period of potential zero outflow is shorter. Under “natural” conditions, zero or near-zero outflow (< 1 cfs) could occur as early as June in dry years.

6. The USFWS objected to the idea of long-term management for arroyo toad and red-legged frog. We agree that in an ideal world recovery could be achieved without long-term or perpetual management. We doubt that the difference between our alternative flow regime and the “natural” flow regime is so great that it will require much if any additional management in the long term. For an average year, our alternative plan will only differ from the estimated natural releases from Pyramid Dam from the beginning of July to the middle of September, and then only by adding 7–8 cfs to the average flow (see Figure 1).

Our alternative plan would remove drought years, but otherwise it would be no different than wetter climatic periods characteristic of the warm phase of the Pacific Decadal Oscillation (Douglas et al. 1982). Such periods have multiple El Niño/Southern Oscillation events that are associated with above average rainfall (Goddard and Graham 1997) and associated higher than normal streamflow and sediment movement in the southwest (Ely 1997, Inman and Jenkins 1999). Historical records show extended periods where rainfall is at double or more the long-term mean for years or decades at a time (see data in Lynch 1931). If our alternative flow regime

is deemed to constitute take, then any wet periods associated with future warm phases of the Pacific Decadal Oscillation would cause take as well if the proposed “natural” flow regime is implemented under those rainfall conditions.

Drought periods more extreme than that experienced during the period that arroyo toad has been actively studied on Piru Creek could also occur, probably requiring intervention in the form of augmented summer releases to avoid extirpation of water-dependent native species. Such local range constrictions almost certainly occurred in the past, but the fragmentation of the system by presence of upstream and downstream dams means that normal variation in climate — let alone changes associated with human-induced climate change — now would require active management actions to allow persistence of native species.

Our assumption is therefore that ongoing management is necessary for persistence of arroyo toad, red-legged frog (for which middle Piru Creek is designated as critical habitat), and other sensitive species, regardless of the flow regime adopted, and that claims to the contrary are likely to be disproven. It is for this reason that we propose such management up front rather than waiting until after the fact when resources, commitments, and regulatory permissions are much more difficult to secure.

We hope that the USFWS will reconsider its determination that the alternative flow regime will cause take and work with interested stakeholders to achieve the balance between rare species that was promised by Don Reck in 2005.

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